PEIS Settlement Lawsuit Database

Draft Project Plan

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U.S. Department of Energy
Office of Environmental Management
Office of Strategic Planning and Analysis

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1. Introduction

In June 1989, the Natural Resources Defense Council, Inc. (NRDC) filed suit against the Department of Energy's (DOE's) Secretary James Watkins over the scope of the Department's Programmatic Environmental Impact Statement (PEIS). In October 1990, a settlement was reached which called for the development of 2 PEIS's, one covering the nuclear weapon's complex future configuration and one for the Environmental Restoration and Waste Management (ER/WM) Program.

In 1995, DOE modified the scope of the ER/WM PEIS to exclude environmental restoration activities. In 1997, the NRDC, acting on behalf of itself and 38 non-governmental groups, filed suit against the DOE and several DOE officials, alleging that the DOE violated a 1990 consent order by failing to prepare a Programmatic Environmental Impact Statement (PEIS) for the Department's environmental restoration program, and that this constituted contempt of court.

Recently, in December 1998, the DOE and the NRDC settled the lawsuit, avoiding further litigation and resulting in the creation of several new tools to enhance public understanding of the multi-billion dollar cleanup of the former nuclear weapons complex. Under the terms of the settlement agreement, both organizations have dropped their claims concerning the 1990 consent order, as well as the contempt allegations.

The settlement agreement has three major components:

- DOE will establish a central information database, available to the public through the Internet, containing information on radioactive and non-radioactive waste and contaminated facilities at DOE sites. The information to be included in the database will come from the Department's Offices of Environmental Management, Defense Programs, Science, and Nuclear Energy. DOE will work with NRDC and others to enhance the usefulness of the database and to explore the establishment of Internet links to other DOE databases.

- DOE will establish a $6.25 million fund to assist citizens' groups and Tribal Nations in conducting technical and scientific reviews of environmental management activities at DOE sites. The resulting technical reports will be made available to any interested member of the public.

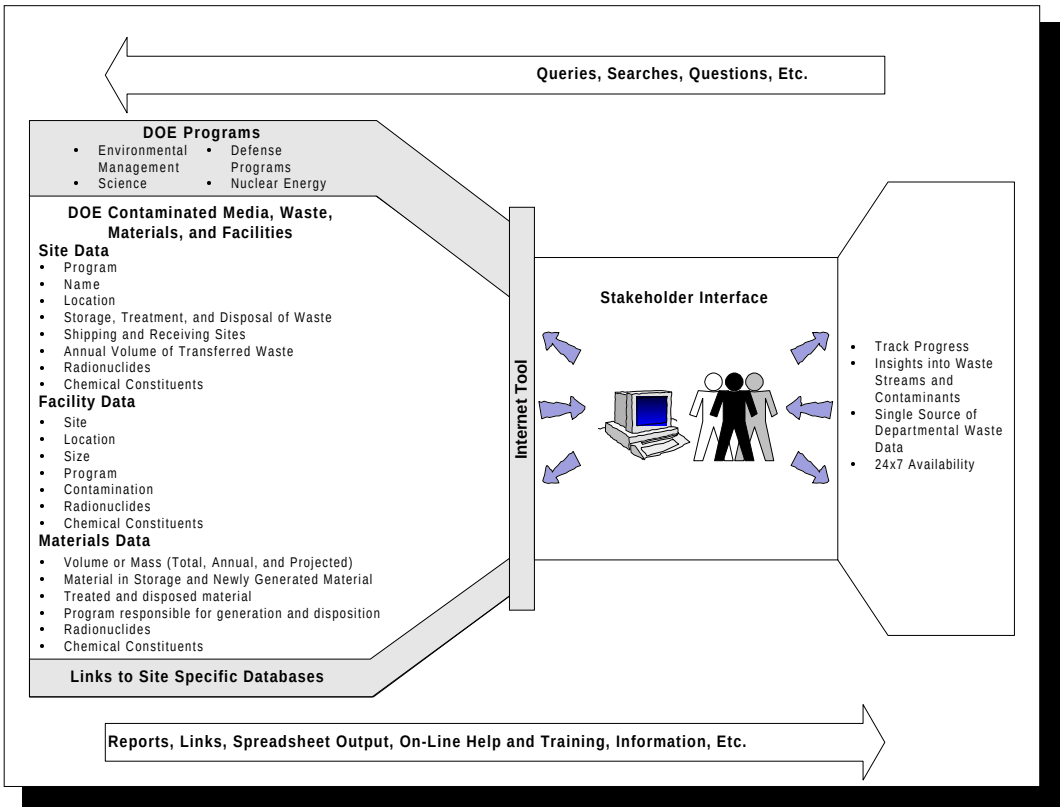
  DOE has selected RESOLVE, Inc. as the administering organization for the fund and has transferred management of the initial $1.25 million to RESOLVE, Inc.

- DOE will prepare and invite public comment on a study on long-term stewardship, that is, the surveillance and maintenance activities that will occur at DOE sites following cleanup.

2. Central Information Database

DOE launched its planning for the PEIS Lawsuit Settlement Database (Database) to support the Central Information Database in early January 1999. The Database will be constructed by integrating existing data sources. In addition, the involvement of numerous DOE and stakeholder organizations and the expeditious

Central Internet Database Overview



completion of critical milestones will be needed to satisfy the terms of the agreement. These characteristics and the sensitivities underpinning the expectations of all parties to the settlement require the rigor of a disciplined project management process to ensure all expectations are met. This project plan serves as a roadmap to ensure the Database is planned, designed, developed, tested, and installed on time, within budget, and to the technical specifications outlined in the objectives of the settlement agreement.

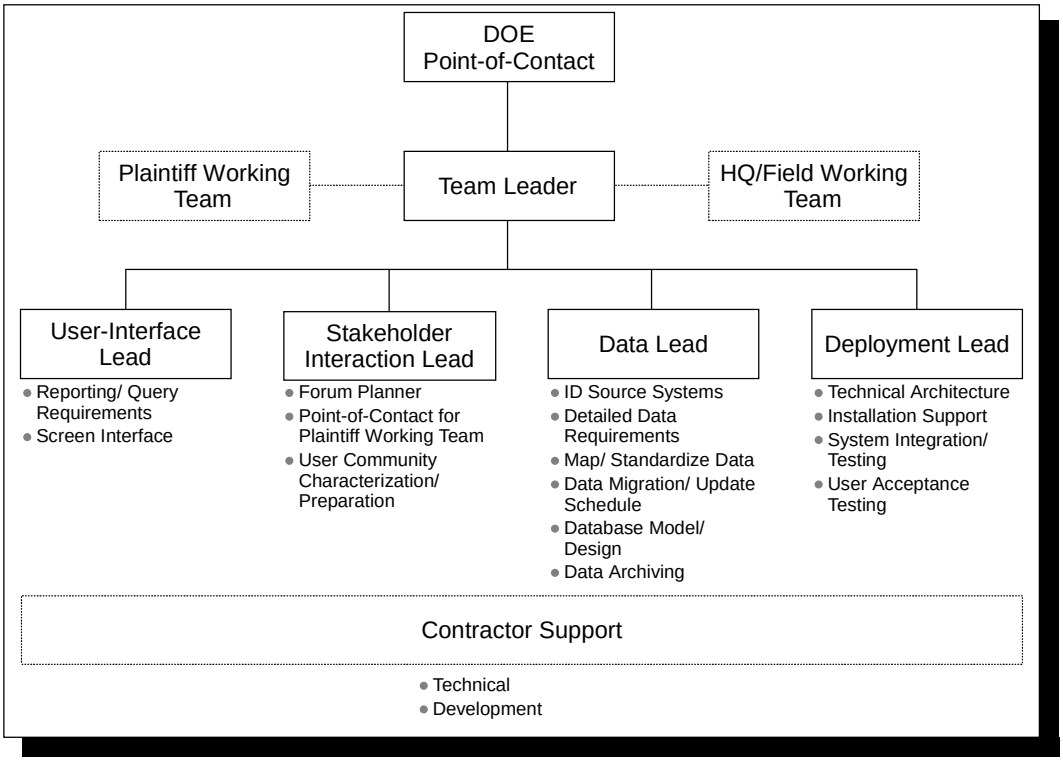
3. Project Description

The key products and services that must be developed and implemented over the next calendar year include:

- A searchable database to provide stakeholder access to DOE contaminated media, waste and materials data and information
- An Internet application to serve as an effective interface for stakeholder users including the generation of standard reports and performance of searches and queries
- Application documentation
- User documentation
- A hard copy reporting service for users lacking Internet access
- Web-based training

Based on the high visibility and public

Database Team Organization



service nature of this project, certain goals have been established to serve as guideposts for project execution and system deployment. These goals include:

- Involving stakeholders in all project phases including two national stakeholder forums and the Plaintiff Working Team.

  The first national stakeholder forum will be held June 3rd and 4th in Columbia, MD. For detailed information on the forum, and to register, go to the Settlement web site at http://www.em.doe.gov/settlement.

  The Plaintiff Working Team and DOE will maintain a continuous and ongoing dialogue throughout the project. The goals for this dialogue are (1) timely communication of DOE proposals, challenges, and issues to the Plaintiff Working Team; (2) timely communication of Plaintiff recommendations, ideas, priorities and issues to DOE; and (3) discussing specific planning issues for the database, including meetings/forums (scheduling, format, agendas, and location).
  DOE will be responsible for scheduling and hosting the conference calls. DOE will also respond in a timely manner to questions and issues raised during the calls. DOE will make available, in a timely manner, for review by the Plaintiff Working Team, relevant documents and Internet access to relevant information including proposed interface and overall database design strategies as well as electronic lists of potential or proposed data sources.

  The Plaintiff Working Team will

communicate information and discussion from the conference calls to other plaintiff organizations and other non-governmental organizations. The Plaintiff Working Team will provide timely feedback to DOE proposals.

- Developing a system architecture that supports 24 hour and 7 days a week access to the Database

- Building from existing DOE systems and databases where practical

- Updating the Database annually, or as often as key databases are updated, and maintaining the Internet application for at least 5 years following the 2nd stakeholder forum

There are a number of constraints that may influence the project, including those that exist for any project and those that are unique to the Database. They include:

- Successfully managing project and project activity dependencies. The major dependencies include availability of data and information from existing databases and effective coordination among EM and other Departmental organizations.

- Acquiring all necessary resources, including the right number and right type of technical and managerial experts and timely acquisitions.

- Successfully managing the project scope to original specifications and approved changes throughout the system development lifecycle

- Delivery and acceptance by stakeholders.

4. Management Approach

The project will be managed to ensure quality, cost effectiveness, stakeholder satisfaction, and communications that provide visibility into project progress and accomplishments. The project will be managed consistent with the DOE's project management guides, the Software Engineering Methodology (SEM), and industry best practices. Contractors will be selected to perform technical project tasks and will be required to adhere to DOE and industry best-practices for system development. The major management practices that will be carried out on the project are:

- Management Organization

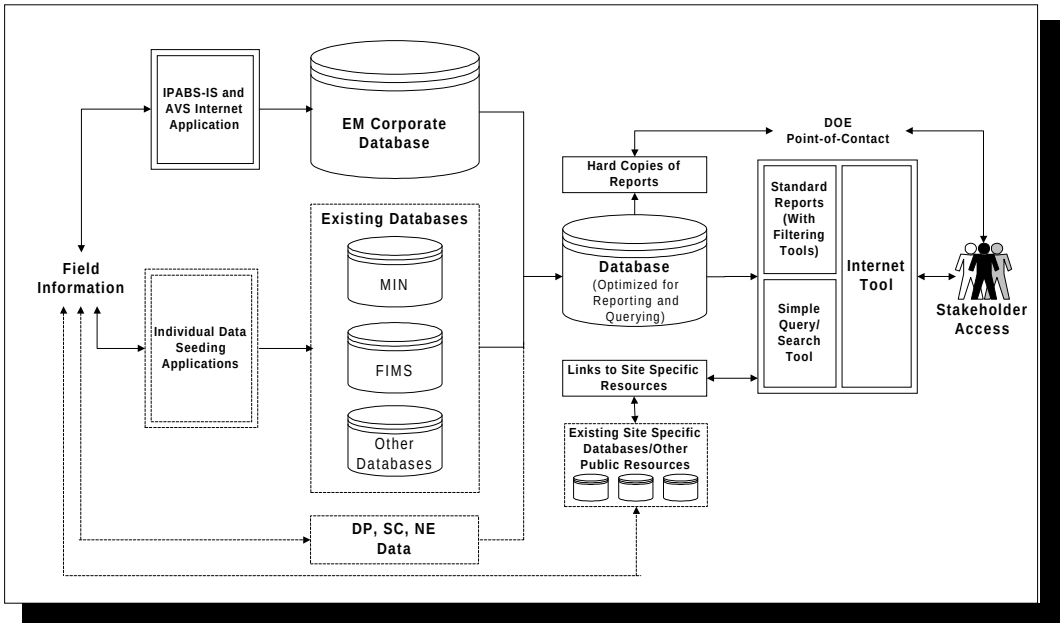
  In accordance with the settlement, Jim Werner of EM-24 (202-586-9280) has been established as the settlement point of contact to work with plaintiffs. In terms of the Database, Jim Werner will work with plaintiffs on the issues to improve upon and refine the content of the Database and expand the availability of linkages from the Database to DOE site-specific databases.

  A Database Team has been established, which includes members from a cross-section of the Environmental Management Program. A HQ/Field Working Team and the Plaintiff Working Team are included in this organization.

- Project Planning

  A comprehensive work breakdown structure and detailed schedule will

Concept of Operations



describe all products and activities necessary to capture and document Database requirements including hardware, software, databases, and network/communication interfaces. In addition to the functional and performance requirements stipulated in the settlement agreement, user input will be solicited from stakeholders to ensure that the database is responsive to the diverse community of users. An early system prototype is also planned to provide feedback about the Web-based user interface early in the system's development lifecycle.

All Database requirements will be baselined and used to control the design requirements for the system. Changes to these baselines will be formally managed and analyzed to determine impacts to any planned or ongoing design/ development effort, schedule, and cost. Change management is also discussed as part of system configuration management. Specific project planning products and activities are discussed in the technical approach section.

- Quality Assurance

  Development of the Database will follow an industry best practices approach to implementing quality assurance, ensuring:

  - An appropriate system development methodology is in place
  - Documentation is produced to support system maintenance and enhancement
  - Mechanisms are in place to monitor and control changes
  - Testing exposes and emphasizes high-risk areas of the system

- Configuration Management

  A simple configuration management process will be developed that focuses on baselining and managing changes to the Database system and documentation. Throughout the development of the system, the configuration management process will focus the following key tasks:

  - Configuration Identification – providing a structure and scheme to make sure that all elements of the system are identified so that they can be tracked

  - Configuration Control – providing a structure and process for making sure that there is one official version of the software and baselined documentation

  - Change Management – providing a method to ensure changes to the system and project documentation are documented, approved and implemented

- Contractor Management

  Contractors involved in the design and development of the Database will be managed and monitored to:

  - Track contractor performance against their assigned work breakdown structure products, activities, schedules and costs

  - Assess the contractor's performance in estimating, planning, and managing changes to their assigned work

  - Review the contractors QA procedures and practices to ensure that they reflect the project's configuration management strategy.

5. Technical Approach

The Technical Approach for managing and developing the Database is based upon guidance provided in the DOE SEM system development lifecycle approach and industry best practices. This approach sets out the activities and products needed to define, design, develop, and implement the Database. The technical approach will take into consideration the data, access, availability, and reporting requirements stipulated in the settlement agreement dated December 14, 1998 as well as input from Stakeholders. A concept of operations schematic describing the Database has been developed.

The SEM lifecycle stages are generally followed in sequence as described below and include analysis, documentation, technical and management review, and feedback processes:

- Planning

  During the Planning Stage the scope of the project will be identified and documented. The work breakdown structure, schedule and quality assurance process will be developed. The project organization will be established, including contractor support. The initial project assumptions concerning resource estimates, technology use, and user and system interfaces will be evaluated and refined.

- Requirements Definition

  The Database requirements will be identified, documented, and shared with stakeholders. Issues related to Internet access, system architecture, database migration, stakeholder involvement and interactions, and security will be important considerations for requirements definition activities.

  The functional requirements will be defined and compiled and a functional baseline established. An appropriate requirements analysis process will be selected and a Software Requirements Specification developed.

  The Database will include:

  - Location of site/radioactive material
  - Volume or mass of radioactive material
  - Chemical constituents
  - Radioactivity of materials
  - Generator of waste or contaminated materials
  - Waste disposition plans and waste transfers
  - Facilities

  The settlement stipulates that DOE, in developing the database and in subsequent operation and maintenance, will define the requirements such that it:

  - Includes in the database only data that is (a) presently available and collected by DOE on a national level, or (b) that is presently planned to be collected in the future by DOE on a national level

  - Provides the level and degree of detail of the data in the database for each category of information which will vary depending upon the level and degree of detail that are currently available to DOE and are collected by DOE on an ongoing basis

  - Includes data about non-radioactive hazardous waste and toxic chemicals gleaned from the DOE report entitled Annual Report of Waste Generation and Pollution Prevention (Waste Generation Report) and the DOE report entitled Executive Order 12856, Federal Compliance with Right-to-know Laws and Pollution Prevention Requirements Annual Report (Right-to-Know Report). DOE will include in the database the data from the Waste Generation Report only after DOE has made the Waste Generation Report publicly available

  - Updates the data elements in accordance with its schedules and procedures on at least an annual basis

  - Provides only the data that is contained in the 1996 DOE report entitled Taking Stock: A Look at the Opportunities and Challenges Posed by inventories from the Cold War Era (Materials in Inventory (MIN) Report) for fissile materials and other hazardous or radioactive materials inventories (information on spent nuclear fuel will be more recent than the information contained in the 1996 report)

  The settlement stipulates that DOE specifically will not provide some types

of data or data from some reports. Some examples are as follows:

- Information that is classified, unclassified controlled nuclear information (UNCI) or proprietary, as defined by Executive Order 12958 and its predecessors; Section 11(y) and 148 of the Atomic energy Act of 1954 (AEA) and 18 U.S.C 1905, respectively

- Data on spent nuclear fuel from commercial reactors not presently under DOE control

- Data about waste and facilities managed by the Naval Nuclear Propulsion Program

During the Requirements Definition Stage, the first stakeholders meeting will be conducted to review the proposed design, structure and linkages to the Database. As required by the settlement, DOE will identify and provide to the stakeholders a list of the major databases that may be included in or linked to the Database in order to improve its usefulness.

Shortly thereafter, a limited prototype of the system will be made available for stakeholder/user review. The feedback from the stakeholders meeting and prototype will be used to improve the Functional Baseline and Software Requirements Specification.

- Functional Design Stage

  The Functional Design Stage will define all of the Database system elements in sufficient detail so that the design will properly reflect all identified requirements.

- Functional design includes:

  - Determining the software structure by identifying design entities and their dependencies

  - Determining design content of system inputs and outputs

  - Designing User Interfaces that are appropriate to the users, content and operating environment of the Database including the menu hierarchy, data entry screens, help functions, and system-level messages

  - Describing system interfaces to depict how the system will interface with other systems identified in the requirements definition stage

  - Designing system security controls to allow stakeholder access to the data, but protecting against unauthorized access to DOE networks and systems

  - Building a simple logical model of the data flow through the system and determining a logically consistent structure for the database(s)

  - Building a simple data model that represents the collection of data and relationship among the data

  - Developing a functional design to incorporate all of the above design considerations

  - Conducting a Functional Design Review to validate the ability of the

software design to satisfy the project requirements

- Initiating hardware and software procurement

- System Design Stage

  The results of the Functional Design Stage provide the information that will guide the development of the Database system design. In accordance with the settlement agreement, a number of the system components are prescribed, such as the use of the Internet, data elements, and linkages to multiple databases. System design involves:

  - Selecting system architecture by examining alternatives for hardware, software, database management and communications facilities

  - Designing physical model and database structure to include the dynamics, data transformation and data storage requirements

  - Developing a system test plan to ensure that the system adequately satisfies the project objectives and functional requirements

  - Conducting a Critical Design Review to demonstrate that the system design can be implemented on the selected platform and accounts for all data requirements and accommodates all design constraints

  - Changing the baselines to reflect changes resulting from the system design activities and reviews, and determining if estimates for resources, cost, and schedule need to be revised

- Development Stage

  The Database will be physically produced and tested during the Development Stage. The following products and activities will be produced during the Development Stage:

  - Developing an acquisition plan for any hardware software and communications equipment needed to install and operate the system

  - Developing an installation plan to specify the requirements and procedures for the full-scale deployment of the PEIS database

  - Establishing a development environment which provides for assembling and installing the hardware, software, and communication equipment, local area networks, databases and other items required to support the development effort

  - Creating/migrating database(s), interfaces, Internet links, web pages, etc.

  - Conducting unit testing to verify the validity of the function and traceability to the design

  - Establishing an approved set of components that are tested and approved

  - Placing the system under configuration control so that any

changes must be formally identified and tracked

- Planning transition to operational status that includes the responsible organizations, procedures, plans, and schedules that will guide the transition

- Generating operating documentation that describes the functions and features of the system from the users point-of-view

- Developing training to teach users how to navigate the system and access the needed data

- Integration, Test, and Installation Stage

  The purpose of the Integration, Test, and Installation Stage is to ensure that the Database is operationally ready for installation and use by the stakeholders. The following activities will be performed during the Integration, Test, and Installation Stage:

  - Conducting integration testing to validate the assembled system components operate together

  - Conducting stress testing to ensure that the system responds in a timely manner, supports security and access requirements, and that query and report capabilities are validated. All operating documents are verified for completeness and compatibility with the system as built

  - Initiating acceptance process to determine if the system as built is acceptable to stakeholders. Training for acceptance test participants may be required

  - Notifying stakeholders that system is operational

- System Support and Maintenance

  As stipulated in the settlement, DOE will maintain the Database for an initial minimum period of five years from the date of the second national stakeholder forum with subsequent decisions to be considered whether or not DOE will maintain and operate the database beyond the initial five-year period.

  Maintenance of the Database will include maintaining the operational system platform (hardware, software, databases, and communication links). Software maintenance will include changes to the system after it goes operational which are:

  - Corrective – for defects not uncovered during testing

  - Adaptive - for changes to keep the system working in a changed or changing environment

  - Emergency – for unscheduled corrective maintenance required to keep the system operational

6. Tentative Implementation Schedule

The project's Tentative Implementation Schedule is based on settlement agreement milestones and initial Database planning. The master schedule will be updated and available to stakeholders as a means of

reporting progress and accomplishment.

Tentative Implementation Schedule

January 1999 to April 2001